

Appl. No. 10/602,912
Reply to Office action of November 2, 2004
Docket. No.: GP-302680

REMARKS

In the November 2, 2004 Office Action, claims 1-4, 6-15, and 17-20 were rejected, and claims 5 and 16 were deemed objectionable. This Response amends claims 8, 12, 13, and 18. Claims 8 and 12 were amended to correct typographical errors and the amendments do not alter the scope of the claims. The amendments to claims 13 and 18 address a matter of form and to clarify the invention as suggested by the Examiner. Applicant submits that the amendments to claims 13 and 18 do not alter the scope of the claims. After entry of the foregoing amendments, claims 1-20 (20 total claims; 4 independent claims) remain pending in the application. Reconsideration of the application is respectfully requested in view of the above amendments and the following remarks.

Objection to Claim 12

Claim 12 has been amended to depend from claim 8 instead of claim 1. In view of this amendment, Applicant requests the withdrawal of the objection to claim 12.

Section 112 Rejection

Claims 13-20 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Independent claims 13 and 18 have been amended as suggested by the Examiner to remove the phrase "or the like" from their preambles. Claims 14-17 variously depend from claim 13 and claims 19 and 20 depend from claim 18. Accordingly, the amendments to claims 13 and 18 also carry through to these dependent claims. In view of these amendments, Applicant requests the withdrawal of the §112 rejection of claims 13-20.

Section 102 Rejection

Claims 8, 10-12, 18, and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Bolz et al., U.S. Pat. No. 6,456,086 (hereinafter "Bolz"). Applicant respectfully traverses this rejection.

Bolz generally discloses a voltage monitoring device for monitoring two different supply voltages. The two supply voltages (identified as U1 and U2 in the Bolz figure) serve as two inputs to an analog-to-digital converter ("ADC") that generates a digital output (identified as D in the Bolz figure). Notably, the digital output D does not represent sampled values of the supply voltages U1 and U2. Rather, the digital output D represents "a ratio of the analog input voltage U2 to the reference voltage U1" (Column 3, Lines 39-41). The ratio D is fed to a

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window comparator (identified as K in the Bolz figure), which compares the ratio D to threshold values G1 and G2 to determine whether the ratio D falls within a predetermined range. Notably, the Bolz device does not compare a sampled value of the U1 voltage to a sampled value of the U2 voltage.

Contrary to the conclusions reached in the Office Action, Bolz does not teach each and every limitation of independent claim 8. For example, Bolz does not disclose a sampling circuit having an output terminal for providing sampled values of first and second reference voltages as recited in claim 8. As mentioned above, The Bolz ADC only generates a single output (namely, the ratio D), and that output is neither a sampled value of the U1 voltage nor a sampled value of the U2 voltage. In addition, Bolz does not disclose a reference voltage diagnostic circuit that compares a sampled value of the first reference voltage to a sampled value of the second reference voltage. Rather, the Bolz comparator only compares the ratio D to a range defined by two threshold values G1 and G2. Furthermore, Bolz does not disclose a reference diagnostic circuit that indicates a fault in response to a difference between the sampled values of two reference voltages.

Accordingly, independent claim 8, and dependent claims 10-12, which variously depend from claim 8, are not anticipated by Bolz. Dependent claim 10 is not anticipated by Bolz for additional reasons – Bolz does not disclose the storing of a diagnostic error code in a memory location. The passage of Bolz cited by the Office Action merely describes how the microcontroller is reset if the ratio D is outside of the predefined range. The cited passage has nothing to do with diagnostic error codes (as commonly used, for example, in automotive applications) or the storage of such diagnostic error codes.

For similar reasons, Bolz does not teach each and every limitation of independent claim 18. For example, the Bolz device does not calculate a difference between a first reference voltage and a second reference voltage as recited in claim 18. Instead, the Bolz device generates a digital representation of a ratio of two voltages as the output D. Consequently, the Bolz device does not compare a voltage difference to a predetermined threshold, and the Bolz device does not indicate a fault if a voltage difference is greater than a predetermined threshold.

Accordingly, independent claim 18, and dependent claim 20, which depends from claim 18, are not anticipated by Bolz. Dependent claim 20 is not anticipated by Bolz for additional

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reasons – Bolz does not disclose the setting of an error flag corresponding to the smaller one of two reference voltages. Indeed, the passage of Bolz cited by the Office Action merely describes how the microcontroller is reset if the ratio D is outside of the predefined range. Bolz, and the cited passage in particular, does not disclose the setting of an error flag based upon which reference voltage is smaller; Bolz merely calculates a ratio D of two sampled voltage values.

For at least the above reasons, claims 8, 10-12, 18, and 20 are not anticipated by Bolz, and Applicant respectfully requests withdrawal of the §102 rejection of those claims.

§103 Rejection – Moreau & Lau

Claims 1-4, 6, 7, 13-15, and 17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Moreau et al., U.S. Pat. No. 5,973,500 (hereinafter “Moreau”) in view of Lau et al., U.S. Pat. No. 6,002,260 (hereinafter “Lau”). Applicant respectfully traverses these rejections.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant’s disclosure. Applicant respectfully submits that the Examiner has not met all of the above criteria.

Moreau generally discloses an apparatus for detecting insulation defects in a power transmission or distribution network (in this regard, Applicant questions whether the Moreau apparatus would be suitable for use in an automobile controller as suggested by the Office Action). Moreau’s FIG. 1 depicts the apparatus, which monitors a network reference voltage (this voltage is unlabeled in FIG. 1, however, in the context of Moreau’s specification, it is clear that the uppermost input to the capture element is the network reference voltage). The other inputs to the capture element represent signals measuring leakage current (Column 3, Lines 32-33). Moreau’s FIG. 2 depicts the capture element in detail. The output of the capture element is sent to a processing unit (see FIG. 1), which processes the output in the manner disclosed by Moreau.

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A detailed reading of Moreau reveals that the Office Action mischaracterizes several of the operational features of Moreau. As best understood, Moreau does not teach at least some of the recited limitations as otherwise suggested by the Office Action. Briefly, the reference voltage of Moreau is apparently used as a switching trigger that enables the further processing of the leakage current measurement signals. In this regard, the capture element is configured and controlled such that either the reference voltage is connected or a leakage current measurement signal is connected, but not both simultaneously (Column 4, Lines 6-14), and a number of switches control the signal capture mode of the capture element, i.e., whether the capture element captures the reference voltage or the leakage current signal (Column 4, Lines 22-26). When the leakage current signals are captured, they are filtered and directed to an ADC (Column 4, Lines 29-32).

Notably, Moreau does not disclose the ADC processing of the network reference voltage. Rather, the reference voltage is employed as a signal that triggers the conversion of the measurement signals by the ADC; the ADC processing occurs when the instantaneous value of the reference voltage is equal to a particular and predefined value, such as zero volts (Column 4, Lines 37-42). When triggered, the ADC samples the incoming leakage current measurement signals (Column 4, Lines 44-49). The sampled measurement signals are then stored in memory for delivery to the processing unit. Notably, the ADC does not sample the network reference voltage, and the processing unit does not process the network reference voltage.

Applicant submits that the reliance on Moreau as a primary §103 reference is unreasonable and that, contrary to the conclusions reached in the Office Action, the proposed combination of Moreau and Lau does not teach each and every limitation of independent claim 1. For example, as mentioned above, Moreau does not disclose a sampling circuit having an output terminal for providing sampled values of a reference voltage. Furthermore, Moreau does not disclose a reference voltage diagnostic circuit that compares a sampled value of the reference voltage to a predetermined value. Consequently, even if one were to form the proposed combination, the invention recited in independent claim 1 would not be obtained.

Accordingly, independent claim 1, and dependent claims 2-4, 6, and 7, which variously depend from claim 1, are not unpatentable over Moreau in view of Lau.

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For similar reasons, Applicant submits that the proposed combination of Moreau and Lau does not teach each and every limitation of independent claim 13. For example, as mentioned above, the Moreau device does not compare the reference voltage to a predetermined value. Furthermore, the Moreau device does not determine whether the reference voltage is within a threshold value of a predetermined value. Consequently, even if one were to form the proposed combination, the invention recited in independent claim 13 would not be obtained.

Accordingly, independent claim 13, and dependent claims 14, 15, and 17, which variously depend from claim 13, are not unpatentable over Moreau in view of Lau.

For at least the above reasons, claims 1-4, 6, 7, 13-15, and 17 are not unpatentable over Moreau in view of Lau. Accordingly, Applicant respectfully requests withdrawal of the §103 rejections of those claims.

§103 Rejection – Bolz & Moreau

Claims 9 and 19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bolz in view of Moreau. Applicant respectfully traverses these rejections.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation to modify a reference or to combine the teachings of multiple references. Second, there must be a reasonable expectation of success. Third, the prior art must teach or suggest all of the recited claim limitations. Of course, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure. Applicant respectfully submits that the Examiner has not met all of the above criteria.

For the reasons discussed above in connection with the §102 rejection and in connection with the §103 rejection citing Moreau in view of Lau, the proposed combination of Bolz and Moreau does not teach or suggest all of the limitations of claims 9 and 19. Indeed, the above discussion of independent claims 8 and 18 also applies to claim 9 (which is dependent on claim 8) and claim 19 (which is dependent on claim 18). Accordingly, claims 9 and 19 are not unpatentable over Bolz in view of Moreau, and Applicant respectfully requests withdrawal of the §103 rejections of those claims.

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Conclusion

In conclusion, for the reasons given above, all claims now presently in the application are believed allowable. Should the Examiner have any questions or wish to further discuss this application, he is requested to contact the undersigned attorney.

If for some reason Applicant has not requested a sufficient extension and/or has not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 07-0960 for any fee which may be due.

Respectfully submitted,

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